or by *sparks* there; provided the sparks were not so large as to cause the electricity to pass in sparks from *p* to *n,* or towards *n ;* and I have seen no reason to believe that in cases of true electro-chemical decomposition by the machine, the electricity passed in sparks from the conductor, or at any part of the current, is able to do more, because of its tension, than that which is made to pass merely as a regular current.

57. Finally, the experiment was extended into the following form, supplying in this case the fullest analogy between common and voltaic electricity. Three compound pieces of litmus and turmeric paper (55) were moistened in solution of sulphate of soda,, and arranged on a plate of glass with platina wires, as in fig- 6. The wire *m* was connected with the prime conductor

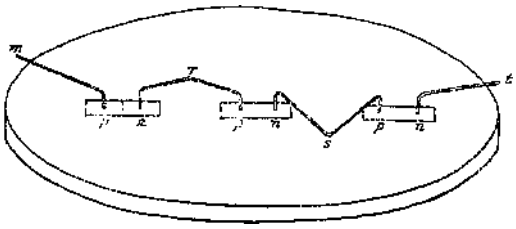

Fig. 6.

of the machine, the wire *t* with the discharging train, and the wires *r* and *s* entered into the course of the electrical current by means of the pieces of moistened paper; they were so bent as to rest each on three points, $n_{\prime}$ $r_{\prime}$ *p ;* $n_{\prime}$ *s,* $p_{\prime}$ the points *r* and 5- being supported by the glass, and the others by the papers: the three terminations *p, p, p* rested on the litmus, and the other three *n, n, n* on the turmeric paper. On working the machine for a short time only, acid was evolved at *all* the poles or terminations *p, p, p,* by which the electricity entered the solution, and alkali at the other poles *n, n, n,* by which the electricity left the solution.

58. In all experiments of electro-chemical decomposition by the common machine and moistened papers (52), it is neces- sary to be aware of and to avoid the following important source of error. If a spark passes over moistened litmus and turmeric paper, the litmus paper (provided it be delicate and not too alkaline) is reddened by it; and if several sparks are passed, it becomes powerfully reddened. If the electricity pass a little